

# Incidental Durotomy/ Dural Tear

ICD-9-CM Coordination and Maintenance  
Committee

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# Objectives

- Define 'dural tear' ('incidental durotomy')
- Differentiate dural tears from other accidental punctures or lacerations
- I.D. Risk factors that increase likelihood of dural tears during spine surgery
- I.D. Reporting Bias (significant under-reporting by Hospital and/or MD)
- Discuss Coding Options and Guidance for classifying incidental dural tears

# Background

- Dural tear is often associated with **intricate surgical procedures** on the spine
- Given the **delicate anatomy** of structures operated on, it is often not avoidable despite meticulous technique
- Pre-existing **comorbidities** (diabetes, steroid use, smoking, et. al) increase risk
- Pre-existing **deformities** (scoliosis/kyphosis, spondylolithesis, stenosis) increase risk

# Incidental Durotomy/Dural Tear

- **Definition:**

- Small tear in the dura mater
- Often unavoidable occurrence of spinal surgery
- Ideally identified and repaired inter-operatively.

- **Consequence of Unrepaired Dural Tear:**

- Further CSF leak
- Formation of pseudo-meningocele

- **Impact on Post-Operative Care:**

- Patient experiences CSF headache (349.0)
- Increased Nursing Care (monitoring, strict orders for 'head on bed' for 24 hours or longer)

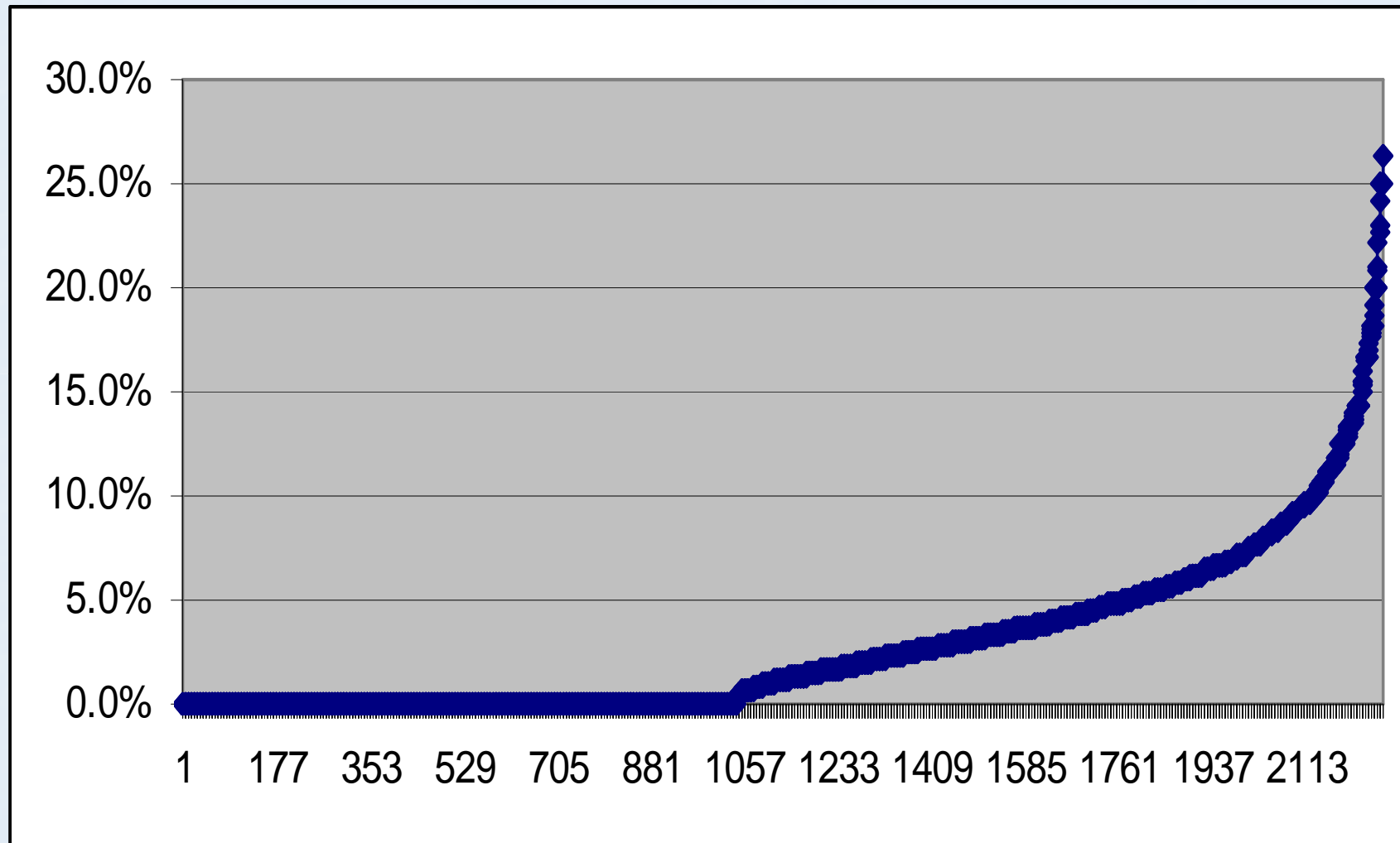
# Dural Tears: Coding Issues

- USE of ICD-9-CM: Disproportionate Impact on Common Quality Indicator (AHRQ PSI-15), *Note: Spine Surgery Removed (Version 3.2, March 2008) until Two Refinements to Address Bias Completed:*
- 1-Consistent ICD-9-CM Reporting across hospitals
  - Major Systematic Under-Reporting Bias (Address Today)
- 2-Refined Risk Adjustment (AHRQ and MD team)
  - Large & Predictable Variation in Patient Risk
  - High Variability in Risk between Hospitals
- General vs. Specific Coding Guidance Differences

# Systematic Under-Reporting Bias

- AHRQ is Removing Spine Surgery Cases from PSI-15 until coding bias is addressed (V.3.2)
- 46% of 2,446 Hospitals Performing Spine Surgery Report NO Dural Tears at all (MEDPAR)
  - Surgeons in Some of These Hospitals Have Journal Articles Reporting Dural Tear Rates Close to 10%
- Many Hospitals Report Repair of the Dural Tear, but NOT the Dural Tear Itself
- 57% of Hospitals Performing Spine Surgery Significantly Under-Report

# Reported Dural Tears – MEDPAR FFY06

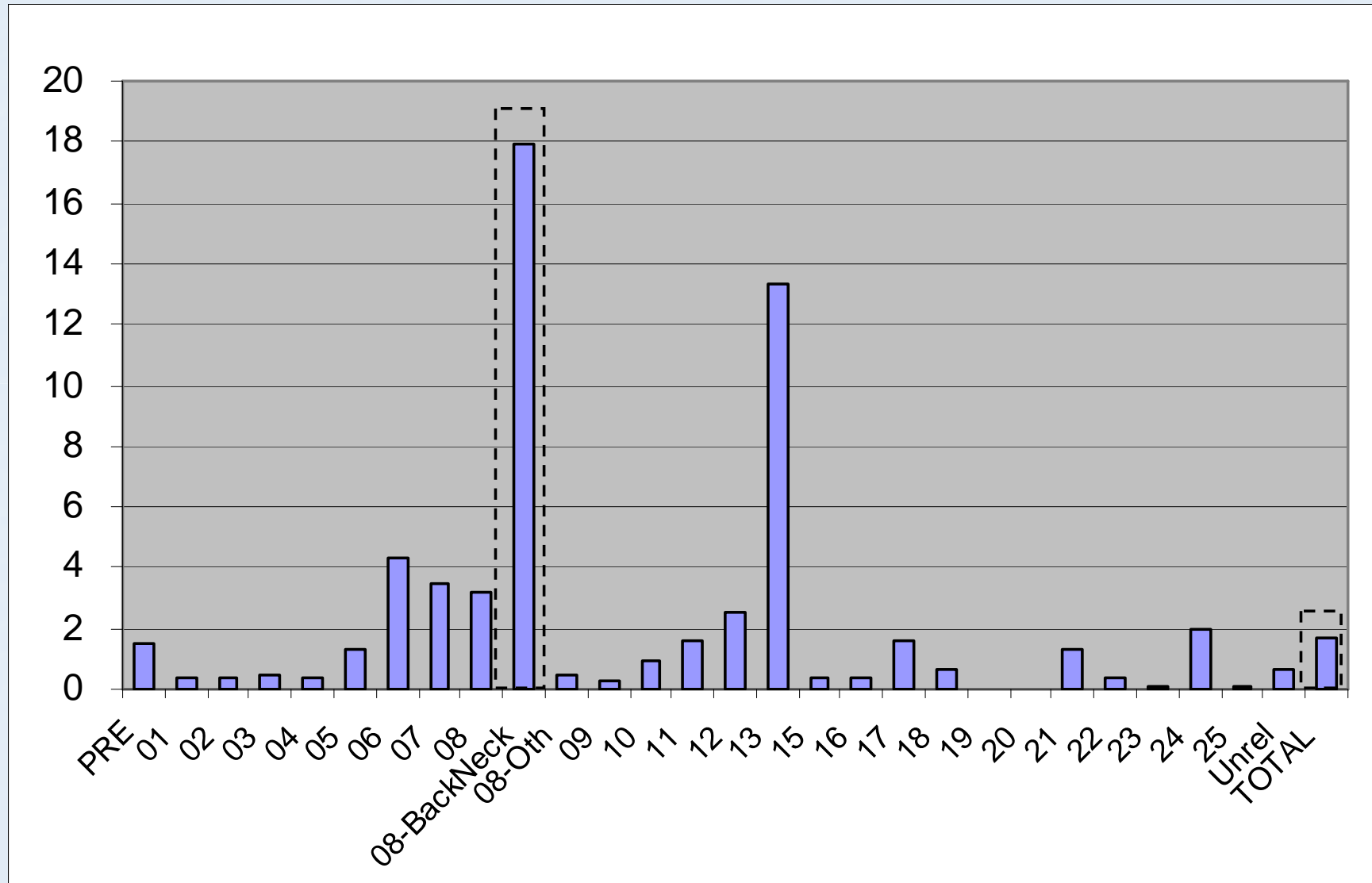


## Disproportionate Impact on Common Quality Indicator (AHRQ PSI-15)

- 13% of 998.2 – Accidental puncture or laceration during a procedure, but
- 40% of Variation Between Hospitals
  - 34% of Hospitals do not do Spine Surgery
  - 25% of Spine Surgery Concentrated in 5%
- Huge Impact on Current Quality Rankings
- Future Concerns – Pay for Performance



## Dx 998.2 (NOT POA) Rate/1,000 Discharges by MDC



# Dural Tear Risk Factors

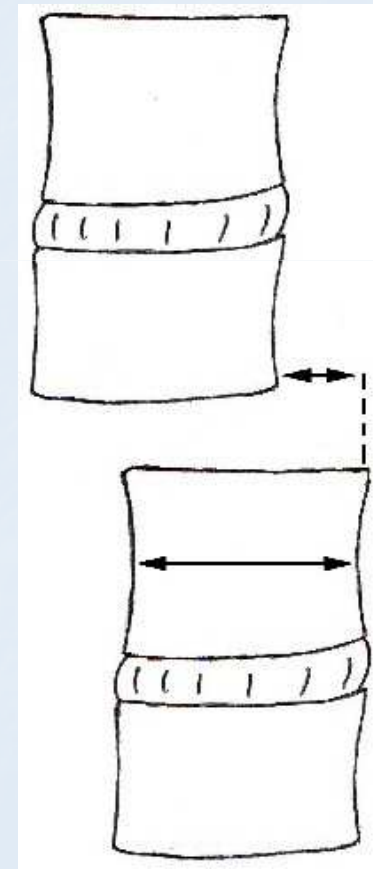
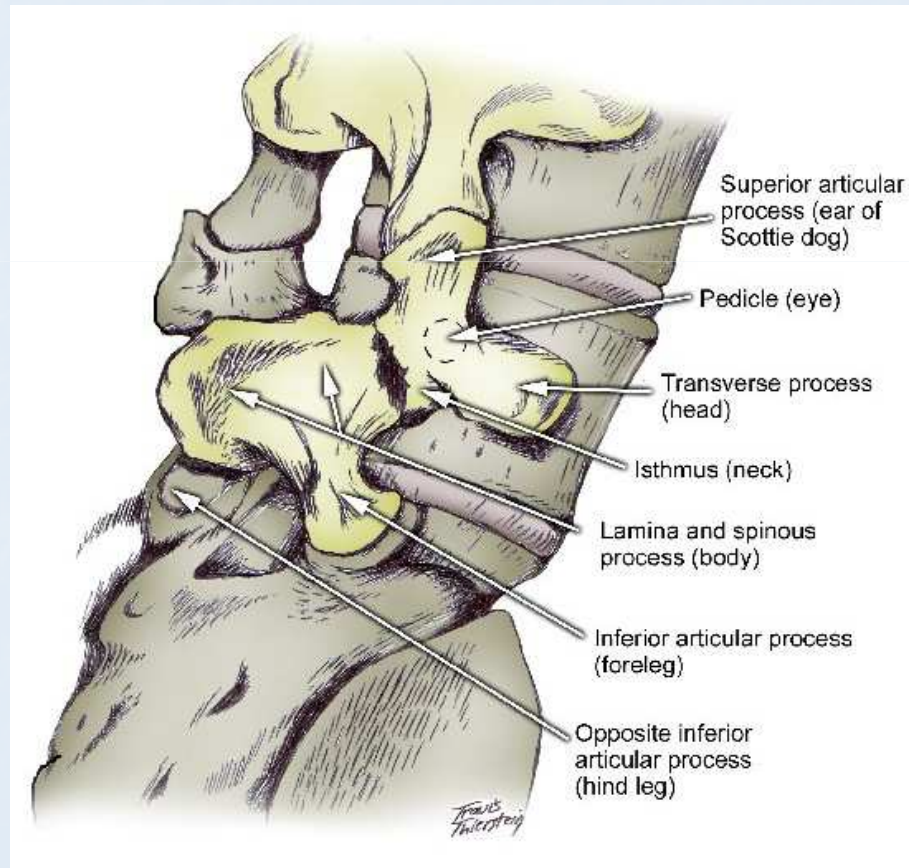
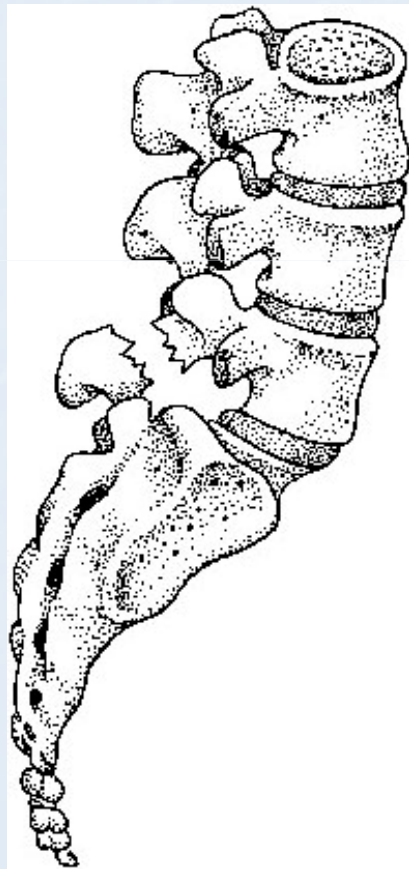
- Diagnosis – Type and Location of Spine Condition
- Patient Anatomy – Mechanics
- Type of Surgery – Fusion, Laminectomy, Disk Removal
- Comorbidities – Prior Surgery, Predictors of Thinning Dura, etc.

# Data on Dural Tear

- Administrative Data reports **less than half** of rates reported in clinical literature
- Wide Reporting Variation Across Hospitals
- Results of Recent Multi-Facility Trial: SPORT
  - **Spondylolysis** (NEJM 5/07)
    - Random Cohort: 11%
    - Observational Cohort: 9%
  - **Lumbar Stenosis** (NEJM 2/08)
    - Random Cohort: 8%
    - Observational Cohort: 10%
  - **Disk Herniation** (JAMA 11/06)
    - Random Cohort: 4%
    - Observational Cohort: 2%

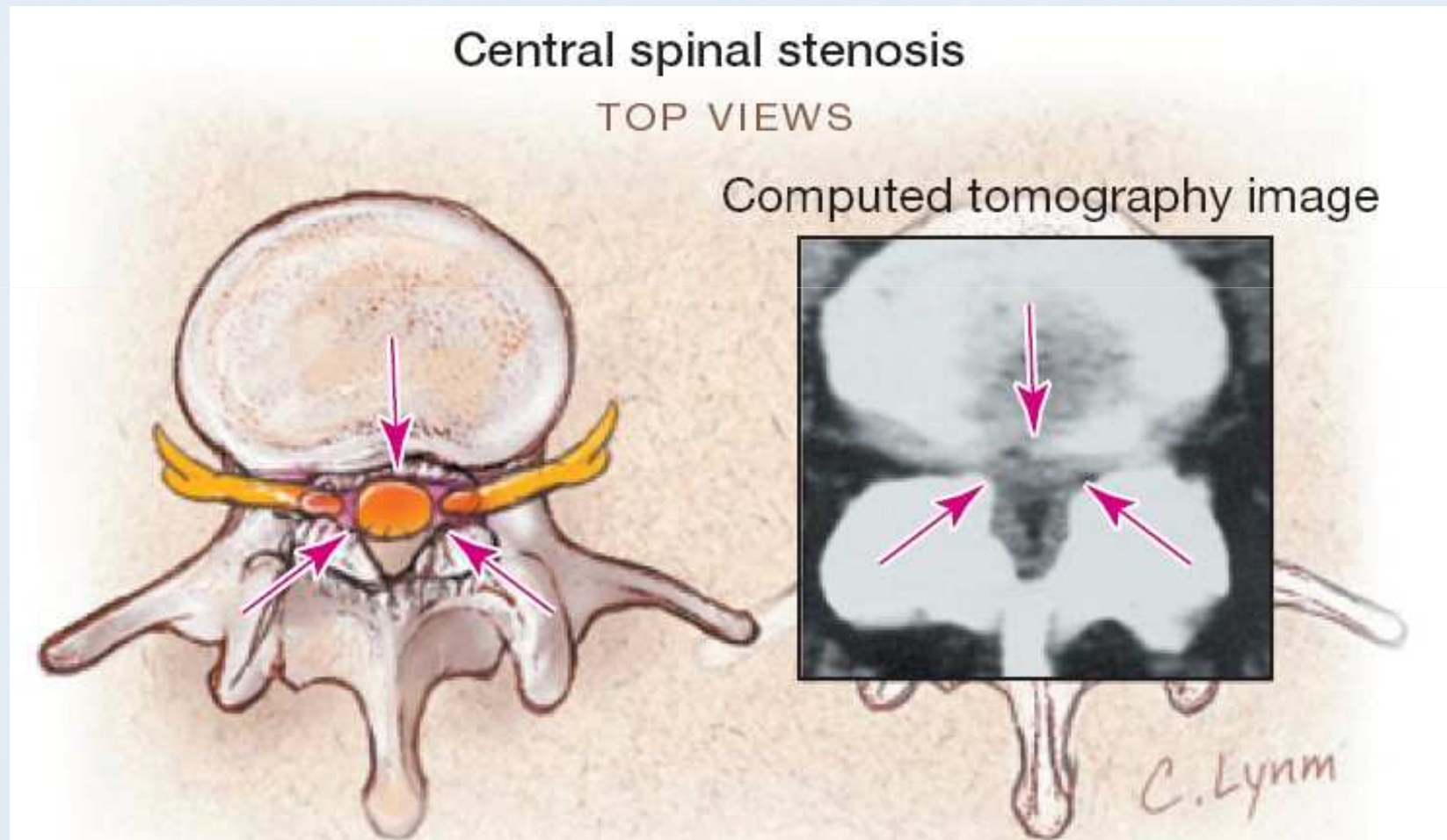
# Dural Tear Risk Factors: Anatomy

## Spondylolysis



# Dural Tear Risk Factors: Anatomy

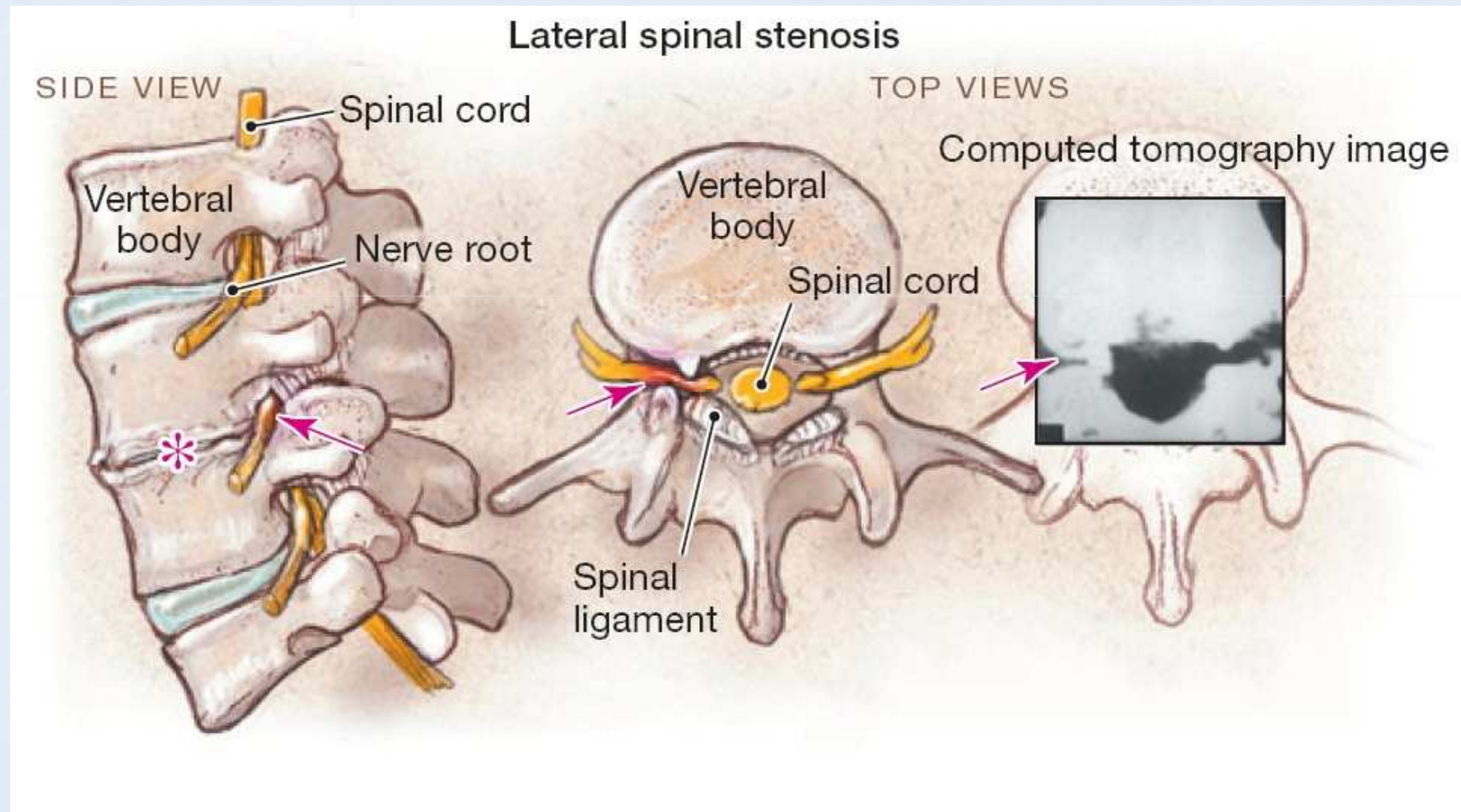
## Central Spinal Stenosis





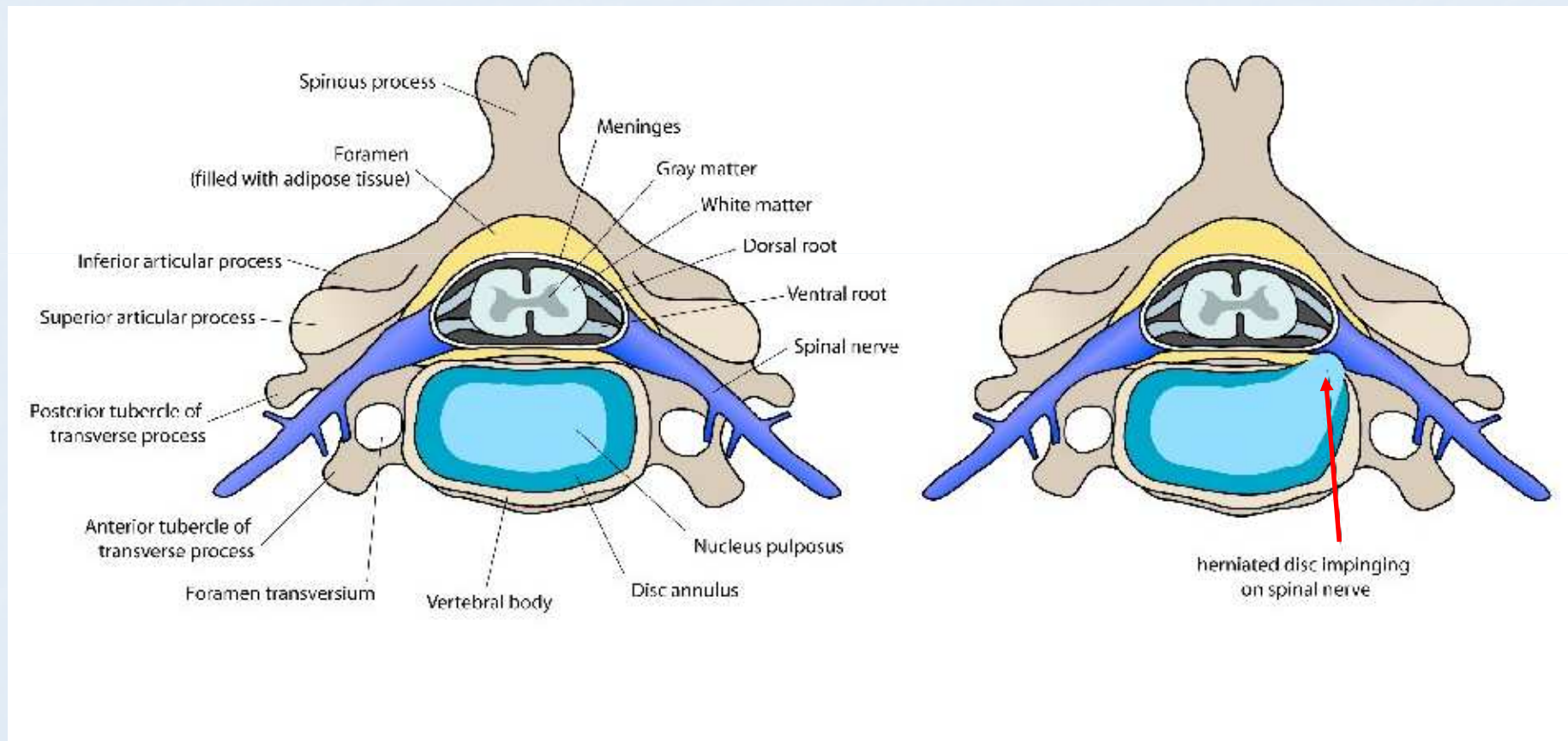
# Dural Tear Risk Factors: Anatomy

## Lateral Spinal Stenosis



# Dural Tear Risk Factors: Anatomy

## Disk Herniation



# Expected Dural Tear Frequencies: by Type of Surgery

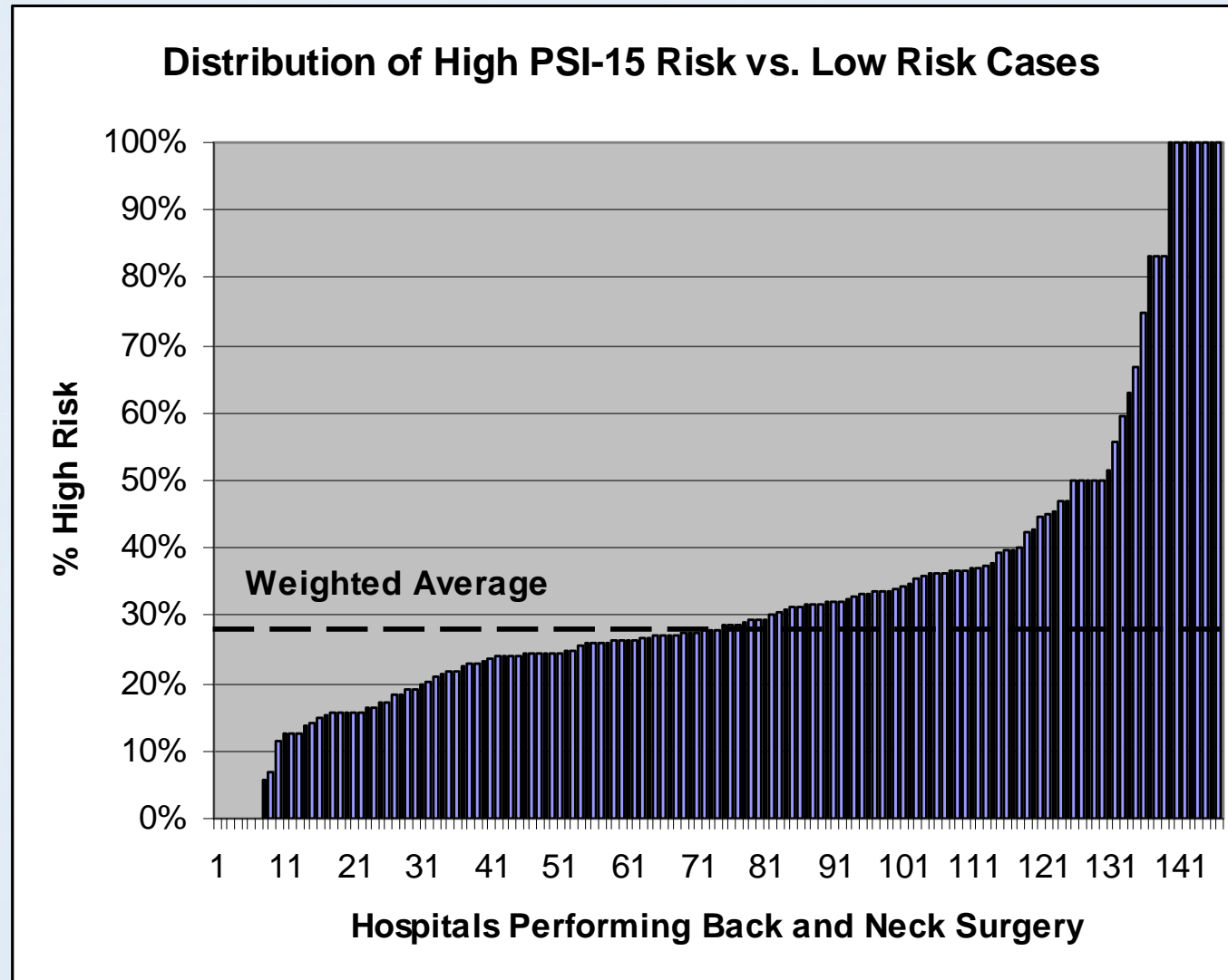
- Revision Spine Surgery: 15 – 33%
- Multi-Level (3+) Spine Surgery: 13 – 15%
- “Other” Spine Surgery: 7 – 10%
- Single Level Fusion: 7 – 8%
- Two Level Decompression: 4 – 5%
- One Level Open Discectomy: 2 – 4%
- Single Level Decompression: 0 – 1%



# Dural Tear Risk Factors: Other Comorbidities

- Meningeal Adhesions (349.2)
- Exostosis (Osteophytes) (721.8)
- Diabetes (250.00 – 250.93)
- Obesity (278.00-278.01, V85.30-V85.4)
- Chronic Steroid Use (V58.65)
- Smoking (305.1, V15.82)
- Kyphosis or Scoliosis (737.10-737.9)

# High Variability in Risk between Hospitals



# Coding Incidental Dural Tears

- SHOULD be Coded as Additional Diagnosis
  - Repair, Increased Monitoring, Extended Stay
- SHOULD be Differentiated from Punctures or Lacerations that Don't Affect Stay
- WHERE to Code is A Major Issue
  - Complications of Multiple Body Sites 996-999
    - Currently Indexed to 998.2
    - Conflict: MD Must Document as "More Than Routinely Expected Complication", but Considers Dural Tear to be Common/Incidental/Unavoidable
  - Specific Body Site = ICD-9-CM Default

# AHA (Faye Brown) ICD-9-CM Coding Handbook - Chapter 29

- **(Emphasis added)** "Categories 996 through 999 are provided in ICD-9-CM for complications of medical and surgical care that are not classified elsewhere. Note that **all conditions that occur following surgery or other patient care are not classified as complications.** First, **there must be a more than routinely expected condition or occurrence.**
- **... the fact that the problem is a complication due to a procedure must be documented by the physician; the coder cannot make this determination. ...**
- *... Complications of surgical and medical care are classified in ICD-9-CM as follows:*
  - **Complications that occur only in other specified body sites are classified in that chapter** of ICD-9-CM
  - **Complications that affect multiple sites or body systems are generally classified in category 996-999**

# Coding Clinic and Index

- *Coding Clinic First Quarter 2006 Page15:*
  - *Question: What is the appropriate code for a dural tear that occurs during surgery?*
  - *Answer: Assign code 998.2, Accidental puncture or laceration during a procedure, for a dural tear that occurs during surgery. Dural tears are usually inadvertent, but fairly common in re-do spinal surgery where the dura has thinned out. **(Emphasis added)***
- October, 2007 ICD-9-CM Code Book
  - tear, dural is now officially indexed to code 998.2

# Coding Options

- Option 1 – New 5<sup>th</sup> Digit in 998.2
  - 998.20 Accidental puncture or laceration during a procedure, unspecified site
  - 998.21 Accidental puncture or laceration of **dura** during a procedure
  - 998.29 Accidental puncture or laceration during a procedure, other specified site
- Option 2 – Code to Body System  
**(preferred)**
  - 349.3 Dural Tear (incidental) (spinal) (vertebral) (cerebral) (thoracic) (lumbar)

# Code Also (Both Option 1 or 2)

- Code Also Associated Conditions
  - Adhesions, meningeal (349.2)
  - Diabetes (250.00-250.93)
  - Exostosis (Osteophytes) (721.8)
  - Obesity (278.00-278.01) (V85.30-V85.4)
  - Intervertebral Disc Disorders (722.0-722.9)
  - Kyphosis or Scoliosis (737.10-737.9)
  - Post Laminectomy Syndrome (722.83)
  - Spinal Stenosis (724.00-724.09) (723.0)
  - Spondylosis (721.0-721.91)
  - Spondylolithesis (756.10-756.19)
  - Steroids (V58.65)
  - Tobacco Use Disorder (305.1), (V15.82)

# Precedents for Option 2

- AHA/Faye Brown's ICD-9-CM Coding Handbook (Chapter 29) – added between 1999 and 2003
  - **"Complications that occur only in other specified body sites are classified in that chapter of ICD-9-CM"**
- Specific Precedents Back to 1995
  - Iatrogenic hypotension moved from 997.91 to 458.2
  - Iatrogenic pulmonary embolism code moved from 997.3 to a new 5<sup>th</sup> digit 415.11 (Iatrogenic PE)